1/2   043

TITLE--PREPARATIVE ASPECTS OF THE RADIATION CHEMISTRY OF ORGANIC COMPOUNDS

-U-

UNCLASSIFIED

PROCESSING DATE--04DEC70

AUTHOR--VERESHCHINSKIY, I.V.

COUNTRY OF INFO--USSR

SOURCE--USP. KHIM. 1970, 39(5), 880-901

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY, NUCLEAR SCIENCE AND TECHNOLOGY

TOPIC TAGS--ORGANIC SYNTHESIS, RADIATION EFFECT, HALOGENATED ORGANIC COMPOUND, ORGANIC SULFUR COMPOUND, ORGANIC PHOSPHORUS COMPOUND, ORGANIC NITROGEN COMPOUND, ORGANOTIN COMPOUND, ORGANOSILICON COMPOUND, ORGANIC OXYGEN COMPOUND

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY FICHE NO----F070/605013/B08   STEP NO--UR/0074/70/039/005/0880/0901

CIRC ACCESSION NO--AP0140353

UNCLASSIFIED

2/2   043
CIRC ACCESSION NO--AP0140353   UNCLASSIFIED
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A REVIEW WITH 86 REFS., THROUGH
PART OF 1970, COVERING: RADIATION SYNTHESIS OF ORG. COMPOS. OF
HALOGENS, S, N, P, SN, O, AND SI.   FACILITY: FIZ.-KHIM. INST.
IM. KARPOVA, MOSCOW, USSR.

PROCESSING DATE--04DEC70

UNCLASSIFIED

2/2   053   UNCLASSIFIED   PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0134920

ABSTRACT/EXTRACT--(U) GP-0-   ABSTRACT. COND. MEASUREMENTS OF CUPRENE (I)
  (OBTAINED BY GAMMA IRRADN. OF C SUB2 H SUB2 PLUS AR MIXT. (1:9) WITH 120
  MEGARAD) AND ITS MODIFIED PRODUCTS, CONDUCTED AT 220-500DEGREES,
  INDICATED THAT PYROLYZED I WAS A SEMICONDUCTOR (E EQUALS 0.55-0.74 EV),
  WHEREAS I AND OXIDIZED I WERE INSULATORS. EPR AND IR SPECTRA AS WELL AS
  X RAY PATTERNS SUGGESTED THAT COND. WAS NOT DUE TO PARAMAGNETIC CENTERS.
       FACILITY: FIZ.-KHIM. INST. IM. KARPOVA, MOSCOW, USSR.

BAEKINA, E. I., VERESHCHINSKIY, I. V., Scientific Research Institute of
Physical Chemistry imeni L. Ya. Karpov

"Radiochemical Synthesis of Organophosphorus Compounds. III. Effect of Small
Amounts of Additives on the Yield of Products of the Reaction of Olefins With
Phosphorus Trichloride"

Abstract: An investigation was made of the effect of various additives on the
reaction of cyclohexene with phosphorus trichloride. It was found that
addition of benzene, carbon tetrachloride and water double the yield of the
final product -- β-chlorocyclohexyl dichlorophosphine -- at 20°C, and increase
the yield by one-fourth at 100°C. Addition of $Fe_2(SO_4)_3 \cdot 9H_2O$ reduces the
yield by 70-80%, while the addition of $CuCl \cdot Cu(OH)$ and $CuCl_2 \cdot Cu(OH)_2$ com-
pletely suppresses the process of addition of PCl_3 to cyclohexene.

1/1

USSR

UDC 541.151

VERESHCHINSKIY, I. V., Physico-chemical Institute imeni L. Ya. Karpov, Moscow, State Committee for Chemistry

"Preparative Aspects of Radiation Chemistry of Organic Compounds"

Abstract: A review with 86 references covering the following topics or organic radiation reactions: Radiation synthesis of alkyl halides. Radiation synthesis of organic sulfides and disulfides. Radiation synthesis of nitrogen-containing organic compounds: a) synthesis based on nitrogen oxides; b) addition of acetonitrile to unsaturated compounds; and c) synthesis of amines and radiation amidation. Radiation synthesis of organ-phosphorus compounds: a) synthesis of alkyl or cycloalkyl substituted phosphorus trichlorides; b) synthesis of addition products of phosphorus trichlorides and unsaturated hydrocarbons; c) synthesis of phosphonium salts from aryl halides; and d) synthesis of phenylphosphonates. Radiation synthesis of tin organic compounds. Radiation synthesis or oxygen-containing compounds. Radiation synthesis of organo-silicon compounds.
1/1

USSR

VERESHCHINSKIY, I. V.

"Radiation-Chemical Synthesis"

Abstract: A review with 53 references in which general characteristic of the processes of radiation synthesis have been formulated and their classification reported; the radiation and photochemical initiation methods have been compared. Specific radiation synthesis processes have been analyzed for fine chemical products -- perfumes, phosphorus-organic compounds of several classes, lead-organic compounds. Several novel routes of radiation synthesis of so far unknown compounds have been discussed.

1/1

EQUIPMENT
Aeronautical

USSR

UDC 531.383

VERESOV, E.S., KANE, M.A. and SOL'NTSEV, R.I., Leningrad Electrotechnical Institute imeni V.I. Yl'yanova (Lenina)

"Synthesis of a Digital Stabilization System in a Three-axial Gyrostabilizer"

Abstract: A synthesized-mathematical-model investigation was made of a gyro-stabilizer system with digital stabilization. Slected criteria were maximum dynamic error in stabilization angle with stepwise and harmonic system reaction, maximum precession angle, and transient-precess time. The three-axis gyrostabilizer was treated as three single-axis units having cross-coupling. Interrelationships were established for moment of inertia relative to stabilizer axis, moment of inertia relative to precession, kinetic moment, friction coefficients for corresponding axis, perturbation moment in sta-bilization axis, stabilizer-motor-winding signal, stabilization angle, pre-cession angle, and discrete time of digital stabilization system. Computer analysis of the synthesized model resulted in a correction program to minimize self-oscillation for single-axis and three-axis gyrostabilizers. The program was successfully applied to a test unit. The method proved to be simple and convenient for investigating the subject systems.

1/1

USSR

UDC 616.988.25-022.395.42.036.2(571.62)

VERETA, L. A., OBUKHOV, G. D., KOVALEVA, Ye. I., SKVORTSOVA, T. M., MOGILEV, V. Ye. VOROB'YEVA, R. N., NIKOLAYEVA, S. P., RUDAKOVA, T. M., and ROSLYAKOV, G. Ye., Khabarovsk Scientific Research Institute of Epidemiology and Microbiology, Khabarovsk

"Landscape-Epidemiological Subdivision of the Amur Territory With Respect to Tick-Borne Encephalitis"

Abstract: An evaluation of the danger of human infection with tick-borne encephalitis in territorial subdivisions of the Amur region differing with respect to natural characteristics has been carried out on the basis of a number of factors, principally the local density of Ixodid ticks. The index of probability of infection (a product of the ratio of persons who have visited forests by the ratio of those who observed the attachment of ticks by the ratio of ticks infected with the virus of the disease) based on data collected in 1969-71 was used as a criterion. Regions with a high incidence of the disease were located in the zone of coniferous-wide-leaved forests, those with a moderate incidence in the subzone of the southern tayga and in agriculturally developed areas in the zone of coniferous-wide-leaved forests, and those with

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USSR

VERETA, L. A., et al., Meditsinskaya Parazitologiya i Parazitarnyye Bolezni, Vol 42, No 1, Jan/Feb 73, pp 28-32

a low incidence in the subzone of the middle tayga. Acute forms of the disease occurred both in regions with a high and a low incidence. The ratio of focal (meningoencephalitic) forms and the index of lethality, which corresponded to this ratio, showed some tendency of increasing from the south to the north.

2/2

USSR

NIKOLAYEVA, S. P., VERETA, L. A., and IVANOVA, I. P., Department of Natural Focal Infections, Khabarovsk Scientific Research Institute of Epidemiology and Microbiology

"Duration of Antibody Preservation and Their Relationship to Gamma- and Beta-Globulin Fractions in Blood Serum of Individuals Who Had Suffered Various Forms of Tick-Borne Encephalitis"

Abstract: Immunological tests were made on blood sera of 68 individuals who had suffered various forms of tick-borne encephalitis (meningeal, focal, obliterative) 1-7 years prior to the study to determine antibody persistence. Complement-fixing antibodies were found to persist 1-3 years at a uniform level, after which time they disappeared, and were more frequently encountered with the obliterative form. Antihemagglutinins and virus-neutralizing antibodies persisted beyond the time of observation irrespective of the form of disease. In early stages (6 months to 1 year) all of these elements were detected in both gamma- and beta-globulin fractions. After 2-7 years complement-fixing antibodies were not detected, while antihemagglutinins and virus-neutralizing antibodies were encountered most frequently in the gamma-globulin fraction.

1/1

- 22 -

USSR   UDC 539.374

VERETENNIKOV, S. V., KRASIKOV, K. I., NOVOBRATSKIY, R. L., PERPER, F. A.,
POLYAK, S. M., UMANSKIY, YA. S., USIKOV, M. P., EPSHTEYN, G. N.

"Effect of an Impact of a Part of a Matrix Under Impulse Distortion"

Translation: The structure and mechanical properties of nickel, nichrome
(NKh7) and Kh18N10T steel after hydraulic impulse stamping with impact and with-
out impact of the parts of the matrix were investigated. It was established
that collision occurs in a closed matrix and the central zone of the part under-
goes the strongest impact. The impact of a part of thickness 2 mm causes
strengthening of the material in the middle of the thickness of the part and
weakening in the zone of a depth up to 0.3 mm from the side of the surface of
the part contacting the matrix which is connected with nonuniform plastic deforma-
tion in the impact process. The weakening effect is supported by results of
studying parts of thickness 0.3 mm that have first undergone collision with the
matrix. Authors abstract.

1/1

TITLE--VARIATIONS IN THE ENZYMIC PROPERTIES OF MUSCLE FIBERS DURING
   EXTRACTION WITH GLYCEROL -U-

AUTHOR-(02)-KALAMKAROVA, M.B., VERETENNIKOVA, A.A.

COUNTRY OF INFO--USSR

SOURCE--BIOFIZIKA 1970, 15(1), 184-7

DATE PUBLISHED-------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--MUSCLE TISSUE, SOLVENT EXTRACTION, PROTEIN, GLYCEROL, ADENOSIE
   TRIPHOSPHATE, ENZYME ACTIVITY, CHOLINESTERASE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1996/0627   STEP NO--UR/0217/70/015/001/0184/0187

CIRC ACCESSION NO--AP0117853
                              UNCLASSIFIED

CIRC ACCESSION NO--AP0117853
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. DURING THE EXTN. OF MUSCLE FIBERS
WITH GLYCEROL THE REMOVAL OF MUSCLE SARCOPLASMIC PROTEINS TAKES PLACE
AND ONLY MYOFIBRILLAR PROTEINS ARE LEFT IN GLYCERINATED MUSCLES. IN
THE COURSE OF EXTN. THE ATPASE ACTIVITY OF MUSCLE FIBERS IS INCREASED
AND ON THE 8-10TH DAY IT REACHES A CONST. VALUE. THE CHOLINESTERASE
ACTIVITY OF THE MUSCLE FIBER REACHES A CONST. VALUE ON THE 16-18TH DAY.
     FACILITY: INST. CHEM. PHYS., MOSCOW, USSR.

UNCLASSIFIED

UNCLASSIFIED   PROCESSING DATE--02OCT70

1/2   022   OF THE CORNEA -U-
TITLE--SOME PROBLEMS OF REFRACTIONAL BREPHOPLASTY

AUTHOR-(02)-BELYAYEV, V.S., VERETENNIKOVA, V.V.

COUNTRY OF INFO--USSR

SOURCE--VESTNIK OFTAL'MOLOGII, 1970, NR 2, PP 28-33

DATE PUBLISHED-------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--CORNEA, TISSUE TRANSPLANT, FETUS, SURGERY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED   STEP NO--UR/0357/70/000/002/0028/0033
PROXY REEL/FRAME--1986/0837

CIRC ACCESSION NO--AP0102799
                        UNCLASSIFIED

CIRC ACCESSION NO--AP0102799

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE AUTHORS REPORT ON THE RESULTS
OF EXPERIMENTAL AND MORPHOLOGICAL INVESTIGATIONS INTO INTRALAMELLAR
GRAITING OF THE FETAL CORNEA (BREPHOPLASTY). TAKING ACCOUNT OF
PROLIFERATIVE POTENTIALITIES OF THE IMPLANT'S EPITHELIUM THEY RECOMMEND
USING ONLY THE CONNECTIVE TISSUE PORTION OF THE DONOR'S CORNEA FOR
GRAFTING. THE PAPER DESCRIBES OPERATIONAL TECHNIQUE AND THE RESULTS OF
IMPLANTATIONS OF THE HUMAN FETUS CORNEA INTO THAT OF THE RABBIT. THESE
HETEROPLASTIC OPERATIONS YIELDED 28 TRANSPARENT "TAKES" OF THE IMPLANT
OUT OF THE TOTAL OF 42 GRAITINGS. THE REFRACTION OF THE RECIPIENT'S
CORNEA COULD BE CHANGED WITHIN THE RANGE OF 16.0 TO 32.0 D, DEPENDING
UPON THE THICKNESS OF THE IMPLANT. THE REFRACTION DATA AVAILABLE DID
NOT SHOW ANY ESSENTIAL CHANGES OVER THE PERIOD OF OBSERVATION (UP TO 1
YEAR). EXPERIMENTAL AND MORPHOLOGICAL INVESTIGATIONS, A CASE OF
REFRACTIONAL GRAFTING OF THE FETAL CORNEA INTO AN APHAKIC HUMAN EYE,
FOLLOWED UP BY THE AUTHORS OVER A PERIOD OF MORE THAN 5 YEARS, ALONG
WITH THE RESULTS OF REFRACTIONAL INTERLAMELLAR HETEROPLASTIES OF THE
HUMAN FETAL CORNEA ARE FACTORS PROMTING FURTHER STUDIES OF THIS METHOD
OF GRAFTING IN CLINICAL CONDITIONS.

UDC 616.24-003.662-092.9-07:616.24-008.939.6

USSR

PAVLOVA, I. V., VASIL'YEVA, G. N., GEL'FON, I. A., and VERETINSKAYA, A. G.,
Institute of Labor Hygiene and Occupational Diseases, Academy of Medical Sciences
USSR, Moscow

"Lung Tissue Proteins in Experimental Silicosis"

Abstract: The chemical composition of lung tissue protein was studied in normal
rats and in rats in which experimental silicosis had been produced. The in-
soluble hydroxyproline-rich collagen that formed in silicosis differed in com-
position from the collagen of the skin or other tissue only in that the hexose
content was higher, although the hexose content was 15% lower for silicotic as
compared to normal lungs. The content of hydroxyproline-containing insoluble
proteins did not increase over period of up to 6 mo during the development of
silicosis; the increase in weight of the lungs within that time was due to a
uniform increase in the amount of all tissue constituents, including soluble
proteins. As the content of insoluble collagens started to increase, the con-
centration of hydroxyproline-containing soluble proteins also increased. In-
soluble collagen is identical to the collagen of other tissues in amino acid

1/2

USSR

PAVLOVA, I. V., et al, Gigiyena Truda i Professional'nyye Zabolevaniya, No 8, Aug 70, pp 25-29

composition (including the content of proline, hydroxyproline, and tyrosine) and also did not differ in this respect from the insoluble collagen of normal lungs. The content of mucopolysaccharides increased in silicotic lungs, particularly after 6.5 mo. The changes in collagen stability during silicosis which were detected by morphological and histochemical methods are evidently due primarily to changes in the collagen fiber structure and only secondarily to changes in the protein structure.

2/2

UNCLASSIFIED   PROCESSING DATE--16OCT70

1/2 -   026
TITLE--ON THE INITIAL FORMS OF CHRONIC CARBON DISULFIDE POISONING -U-

AUTHOR-(05)-MILKOV, L.YE., MONAYENKOVA, A.M., BYALKO, N.K., GLOTOVA, K.V.,
VERETINSKAYA, A.G.
COUNTRY OF INFO--USSR

SOURCE--GIGIYENA TRUDA I PROFESSIONAL'NYYE ZABOLEVANIYA, 1970, NR 5, PP
28-32
DATE PUBLISHED-------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--POISON, CARBON DISULFIDE, INDUSTRIAL HYGIENE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1995/0450   STEP NO--UR/0391/70/000/005/0028/0032

CIRC ACCESSION NO--AP0116116
                    UNCLASSIFIED

CIRC ACCESSION NO--AP0116116

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. AN EXAMINATION OF WORKERS EXPOSED
TO THE EFFECT OF CARBON DISULFIDE IN CONCENTRATIONS OF 30-60 MG-M PRIME3
DISCLOSED THE PRESENCE OF THE INITIAL FORMS OF CHRONIC CARBON DISULFIDE
POISONING IN THE SHAPE OF VEGETATIVE VASCULAR DYSFUNCTION (NOT
INFREQUENTLY WITH HYPERTENSIVE REACTIONS) AND OF THE ASTHENO VEGETATIVE
SYNDROME, OFTEN APPEARING IN CONJUNCTION WITH SIGNS OF MILDLY PRONOUNCED
VEGETATIVE SENSITIVE POLYNEURITIS, COMMONLY DEVELOPING IN PERSONS WITH
LONG SERVICE RECORDS. IN THE INITIAL FORMS OF POISONING A NUMBER OF
NONSPECIFIC CHANGES IN INDIVIDUAL BIOCHEMICAL BLOOD AND URINE INDEXES
WERE ELICITED, WHEREBY IN CASES OF VEGETATIVE VASCULAR DYSFUNCTION OF A
DECLINE OF THE PSEUDO CHOLINESTERASE ACTIVITY AND A FALL OF THE BLOOD
CHLORIDE CONCENTRATION, ALONG WITH AN ELEVATED CATECHOLAMINES EXCRETION
(WITH NORPINEPHRINE BEING COMMONLY RESPONSIBLE FOR IT) OCCURRED MUCH
MORE OFTEN THAN IN THE ASTHENIC FORM OF POISONING. PERSONS EXPOSED TO
CARBON DISULFIDE CONCENTRATION NOT SURPASSING THE MAXIMUM PERMISSIBLE
LEVEL (10 MG-M PRIME3) ALSO DEMONSTRATE INITIAL FORMS OF CHRONIC CARBON
DISULFIDE POISONING, ALTHOUGH IN FEWER CASES. THIS MAKES IT NECESSARY
TO LOWER THE FIXED MAXIMUM PERMISSIBLE CONCENTRATION LEVEL OF CARBON
DISULFIDE IN CONSIDERATION OF THE INHALATION AND CUTANEOUS ROUTS OF ITS
INGRESS INTO THE ORGANISM.   FACILITY: INSTITUT GIGIYENY TRUDA I
PROFZABOLEVANIY AMN SSSR.

UNCLASSIFIED

USSR   UDC 669.71.053.2

KOZLOV, V. M., GUSEVA, N. S., VERETINSKIY, V. N.

"Reduction of Kaolin With Carbon"

Tr. Vses. N-i. i Proyektn. In-ta. Alyumin., Magn. i Elektrodn. Prom-sti [Works
of All-Union Scientific Research and Planning Institute of the Aluminum, Magnesium
and Electrode Industry], 1970, No. 71, pp 191-200. (Translated from Referativnyy
Zhurnal Metallurgiya, No. 5, G130, by the authors).

Translation: The reduction of kaolin by carbon from a briquetted charge in the
1300-2000° temperature interval is studied. A reduction mechanism is suggested.
Reduction is performed for mullite and SiO_2, produced in the process of mulliti-
zation of kaolin before the beginning of reduction. The reason for limiting the
content of Al in alloys of Al with Si not containing Al_4O_3 is stated. 2 figs;
2 tables; 7 biblio, refs.

1/1

1/2   024   UNCLASSIFIED   PROCESSING DATE--18SEP70
TITLE--CHROMIUM AND SILICON WELDING ELECTRODES I10 -U-

AUTHOR-(03)-PETRICHENKO, A.M., VERETNIK, L.D., RYUMIN, G.V.

COUNTRY OF INFO--USSR

SOURCE--SVAR. PROIZVOD. 1970, (1), 43

DATE PUBLISHED------70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--WELDING ELECTRODE, WEAR RESISTANT FERROUS ALLOY, HIGH CARBON
STEEL, ALLOY STEEL, FERROUS WELD HEAT TREATMENT, CHROMIUM STEEL, SILICON
STEEL/(U)I10 WELDING ELECTRODE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1986/0769   STEP NO--UR/0135/70/000/001/0043/0043

CIRC ACCESSION NO--AP0102732
                          UNCLASSIFIED

UNCLASSIFIED   PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0102732
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE NEW ELECTRODES ARE DESTINED
FOR WELDING MACHINE COMPONENTS EXPOSED TO ABRASION. THE METAL WELDED BY
ELECTRODES HAS THE COMPN. C 1.0-1.5, CR 4.5-6, SI 2.0-2.2, MO 0.6-0.7,
TI 0.6-0.7, AND MN 0.8-1PERCENT. THE I10 ELECTRODE CONSISTS OF A STEEL
CORE (SW-0.8 STEEL) WITH A SPECIAL COVER. THE WELDED COMPONENTS SHOULD
BE HARDENED AND THEN TEMPERED. OPTIMUM HEATING IS UP TO 1000DEGREES,
AND COOLING IN OIL. THE HARDNESS OF A THUS OBTAINED WELDED METAL IS
HRC 60-2 (WITHOUT THERMAL TREATMENT 45-52).

UNCLASSIFIED

Forming

UDC 621.791.948

USSR

VERETNIK, L. D., PODOL'SKIY, B. A., Kharkov; and SHAPIRO, I. S., Moscow

"Plasma-Arc Cutting of Aluminum Casting Heads"

Kiev, Avtomaticheskaya Svarka, No 6, Jun 70, pp 64-65

Abstract: The amount of labor expended in separating aluminum casting heads can be reduced considerably by plasma-arc cutting. Special equipment of the OPR-6 type was used with the RPR-6 manual plasma-arc cutter to produce casting heads of complex configuration. A sample is shown in a photograph. Details of the process are given. A special coating was developed to keep the surface of the head from adhering to the poured metal. A table is given which gives the gas (argon and hydrogen) flow rates for the arc and the current required for cutting various thicknesses of the aluminum heads.

1/1

VEREVKA, N. A.

SOME ELECTRIC PROPERTIES OF A TURBOMAGNETIC VELOCITY SENSOR

Insignificant size, lack of a need for current sources and additional amplifiers, high linearity of conversion, simplicity and reliability are the principal requirements imposed on a turbomagnetic velocity sensor with an axial vane when registering the velocity or movement of objects in a fluid, especially some hydrobionic objects.

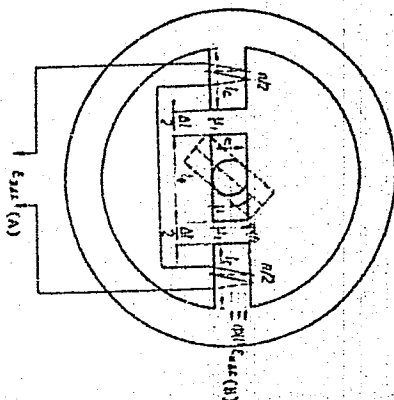Fig. 1. Diagram of turbomagnetic sensor. A) emf, B) mmf

193

JPRS 55912
15 May 72

A70-24315 #   Study of the geoactive particles and photo-electrons by means of satellite 'Kosmos-261.' IV—Study of charged particles with a middle and high energy (Issledovanie geoaktivnykh korpuskul i fotoelektronov na sputnike 'Kosmos-261.' IV—Izmereniia zariazhennykh chastits srednikh i vysokikh energii). A. D. Boliunova, A. D. Verevkin, Iu. I. Gal'perin, L. S. Gorn, L. S. Zhurina, I. D. Ivanov, R. N. Isaeva, I. P. Karpinskii, R. A. Kovrazhkin, V. V. Temnyi, B. I. Khazanov, A. V. Shifrin, and F. K. Shuiskaia. Kosmicheskie issledovaniia, vol. 8, Jan.-Feb. 1970, p. 126-135. 7 refs. In Russian.

Descriptions of the scintillation spectrometers for measuring the electrons with energy ranging from 20 to 150 keV and more, protons with energy ranging from 0.30 to 9 MeV. A lead-screened Geiger counter for measuring the protons with energy above 50 MeV and rigid electrons is also described. The latitude-dependent intensity distribution of the intrusive electrons is determined together with the pitch distribution of the electron intensity in the auroral zone, and differential electron spectra.   Z.W.

REEL/FRAME
19800076

Acc. Nr.: AP0042567

Ref. Code: UR 0293

JPRS 50162

Measurements of Intermediate- and High-Energy Particles

(Abstract: "Measurements of Charged Particles of Intermediate and High Energies," by A. D. Bolyunova, A. D. Vereykin, Yu. I. Gal'perin, L. S. Gorn, L. S. Zhurina, I. D. Ivanov, R. N. Isayeva, I. P. Karpinskiy, R. A. Kovrazhkin, V. V. Temnyy, B. I. Khazanov, A. V. Shifrin and F. K. Shuyskaya; Moscow, Kosmicheskiye Issledovaniya, Vol VIII, No 1, 1970, pp 126-135; [Note: This is part of a sectionalized article "Study of Geoactive Corpuscles and Photoelectrons on the Satellite 'Kosmos-261'," Kosmicheskiye Issledovaniya, Vol VIII, No 1, 1970, pp 104-136]

This article describes the RIE-205 scintillation spectrometer for electrons of intermediate energies, the RIP-802 scintillation spectrometer for protons and the RIG-III lead-shielded Geiger counter. The RIE-205 instrument measured electrons in the ranges 20-45, 45-85, 85-120 and 120-150 keV and the total intensity of electrons with an energy greater than 150 keV (geometry factor $2 \cdot 10^{-3} cm^2 \cdot$ sterad). The RIP-802 instrument measured protons in the ranges 0.30-0.45, 0.45-0.70, 0.70-0.95 and 0.95-9 MeV with a geometry factor of $1.5 \cdot 10^{-2} \cdot$ sterad. The RIG-111 instrument measured

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AP0042567

protons with E > 50 MeV and hard electrons. In the radiation belts and auroral zones the instruments measured the fluxes and energy spectra of electrons and protons, their distribution by pitch angles and spatial-temporal characteristics. It was possible to determine the latitude varia-tion of the intensity of injected electrons, the pitch distribution of intensity for auroral zone electrons and the differential electron spectra. For example, the electron fluxes measured with the RIE-205 spectrometer can be assigned to the following groups: a) trapped electrons in the inner zone (L $\leq$ 2.5) were registered for the most part in the region near the Brazilian anomaly; their flux for an energy E > 150 keV attained 10^8 parti-cles/cm^2·sec, and was highly dependent on pitch angle; a pronounced maximum was observed for pitch angles 90°; b) trapped electrons in the outer zone 2.5 $\leq$ L $\leq$ 7, also with a maximum intensity for pitch angles of 90°; in many cases quasitrapped particles were registered in the region of in-variant coordinates h_{min} $\leq$ 100 km with intensities up to 2·10^6 particles/ cm^2·sec·sterad; c) sporadic hard electrons injected into the atmosphere in the middle latitudes; in these cases the mean energy was usually ~100 keV and the particle flux attained 10^5 particles/cm^2·sec; d) electrons of in-termediate and high energies inje ted into the atmosphere in the high latitudes; they are frequently ob erved near the auroral zone.

19760546

USSR   UDC: 621.372.413

VEREVKIN, Yu. K., SALASHCHENKO, N. N.

"Investigation of the Excitation of Open Resonators by Tuned Slot Antennas and Distributed Structures"

V sb. Raschety radiotekhn. skhem i proyektir. radioapparatury (Calculations of Radio Circuits and Design of Radio Equipment--collection of works), Omsk, 1970, pp 112-116 (from RZh-Radiotekhnika, No 6, Jun 71, Abstract No 6B160)

Translation: Expressions are derived for the loaded Q and transmission ratio of a resonator. An experimental check is made for a resonator formed by a flat and a spherical mirror and excited by a tuned slot antenna in the center of a flat screen, as well as for a resonator made up of two spherical mirrors and excited through a metal diaphragm with perforation. Higher transmission ratios and Q values are obtained in the case of excitation by the latter method. Four illustrations, bibliography of three titles. N. S.

1/1

- 13 -

USSR

UDC: 621.372.413

VEREVKIN, Yu. K., SALASHCHENKO, N. N.

"Investigation of Excitation of Open Resonators by Untuned Slot Antennas"

V sb. Raschety radiotekhn. skhem i proyektir. radioapparatury (Calculations of Radio Circuits and Design of Radio Equipment—collection of works), Omsk, 1970, pp 117-123 (from RZh-Radiotekhnika, No 6, Jun 71, Abstract No 6B161)

Translation: The authors calculate the Q and transmission ratio of a loaded resonator. The method and results of an experimental study are presented. The theory is qualitatively confirmed by the experimental data with an accuracy up to the regions of degeneration of the normal modes of the resonator. Four illustrations, bibliography of five titles. N. S.

1/1

Analysis and Testing

UDC 543.062:546.3-19'87'657

USSR

CHERNOGORENKO, V. B., and VEREYKINA, L. L., Institute of Problems of Metal Science, Academy of Sciences Ukr SSR

"Chemical Analysis of Alloys of Bismuth With Rare-Earth Elements"

Kiev, Ukrainskiy Khimicheskiy Zhurnal, Vol 36, No 12, Dec 70, pp 1296-1298

Abstract: A procedure was developed for the analysis by titration of a solution of Bi and a rare-earth element that were present in relatively high concentrations (e.g., a solution in 250 ml dilute HNO_3 of 0.5 g of an alloy containing Bi 5-95%, Nd 5-95%). In 20 ml of the solution brought to pH 1.1, Bi was titrated with an 0.01 M solution of complexon III (di-Na salt of EDTA, Trilon B), using xylenol orange as indicator. Upon change of the color of the solution from red to yellow, the solution was brought to pH 5.1-5.3 by adding ammonia dropwise. Ten ml of a 40% urotropine solution were added as a buffer and the rare-earth element was titrated with the same complexon III solution. An acetate-ammonia buffer solution with pH 5.2-5.4 could also be

1/2

USSR

CHERNOGORENKO, V. B., and VEREYKINA, L. L., Ukrainskiy Khimicheskiy
Zhurnal, Vol 36, No 12, Dec 70, pp 1296-1298

used. This method of determination was suitable for solutions
containing Bi and any of the trivalent rare-earth elements, but
Ce^{4+} had to be reduced to Ce^{3+} with H_2O_2: the excess of H_2O_2 de-
composed by boiling. Ascorbic acid was then added to prevent
oxidation of Ce^{3+} to Ce^{4+} by O_2 of the air. To separate Bi pre-
sent in an amount $< 2\%$ in a Bi-Nd alloy, 20 ml of a solution of
0.2 g of the alloy in 250 ml dilute HCl were brought to pH 2-3
and extracted with CCl_4 in the presence of sodium diethyldi-
thiocarbamate. By treating the CCl_4 solution with HNO_3, Bi was
transferred from this solution into the aqueous phase. It was
than determined spectrophotometrically with KI.

USSR

VEREZHENSKIY, A. R., DZERO, O. I., KOZHOKARU, N. YA.

"Some Experimental Data Processing Programs on the Nairi Computer"

Translation: A study was made of the programs and their block diagrams for certain problems frequently encountered for processing on the Nairi computer: 1) the equation for a straight line of the type $y = ax + b$; 2) the equation of a hyperbola of the type $y = a + b/x$; 3) the equation of a parabola of the type $y = a_0 + a_1 x + a_2 x^2$; 4) the correlation coefficient for two variables; 5) the method of variation series; 6) the solution of polynomials.

1/1

USSR

UDC 8.74

KOZHOKARU, N. YA., VEREZHENSKIY, A. R.

"Program of the Four-Factor Function and Set Correlation Coefficient"

Tr. Kishinev, s.-kh. in-ta (Works of the Kishinev Agricultural Institute), 1972, No 86, pp 68-71, 76 (from RZh-Kibernetika, No 12, Dec 72, Abstract No 12V496)

Translation: A program is proposed for the Nairi computer when determining the coefficient of the coupling equation for a four-factor function and the set correlation coefficient by the model developed by A. A. Matsarin. The program is allocated with 600 ready-access memory cells and takes 347 cells.

Standard routines are used in the program to solve the system of algebraic equations and calculate the determinant. The program is self-restoring, and the initial data are not retained.

1/1

1/2   015   UNCLASSIFIED   PROCESSING DATE--23OCT70
TITLE--CEMENTING WELLS OF THE WEST SOSNOVKA AREA -U-

AUTHOR-(04)-VEREZHNOY, A.I., NAZARENKO, V.L., MOSKOVKIN, I.V., VOLOSHIN,
   A.A.
COUNTRY OF INFO--USSR

SOURCE--GAZOV. PROM. 1970, 15(2), 9

DATE PUBLISHED-------70

SUBJECT AREAS--MATERIALS, MECH., IND., CIVIL AND MARINE ENGR

TOPIC TAGS--PHENOL FORMALDEHYDE RESIN, CEMENT, HARDNESS, WELL DRILLING
   MACHINERY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1998/2042   STEP NO--UR/0492/70/015/002/0009/0009

CIRC ACCESSION NO--AP0122271
                           UNCLASSIFIED

UNCLASSIFIED   PROCESSING DATE---23OCT70
CIRC ACCESSION NO--AP0122271
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ADDN. OF 2 WT.PERCENT OF AN AQ.
  PHENOL FORMALDEHYDE RESIN SLOWED THE HARDENING, INCREASED THE STRENGTH,
  AND REDUCED THE GAS PERMEATION OF THE CEMENT.

UNCLASSIFIED

USSR

UDC: 621.79

VERGASOVA, L. L., and LAZAREV, E. M.

"Diffusion Interaction of Components in Alitizing Niobium Alloys With Titanium"

Moscow, Fizika i Khimiya Obrabotki Materialov, no 6, Nov-Dec 70, pp 46-49

Abstract: Despite the advancement of studies in protective coatings for refractory metals and heat-resistant alloys on refractory-metal base, the processes occurring at the metal-coating interface, both during coating application and in service, are still not clearly understood. This study concerns the process of thermal diffusion calorization of niobium alloys with titanium (from 5 to 50 wt.%), the redistribution of components in both the alloy and coating, and the "ascending" diffusion of titanium into the coating, which is explained by the high diffusion mobility of titanium and the thermodynamic characteristics of its interaction with aluminum. The resistance of the coating to oxidation at 1100 and 1200°C has been analyzed and the composition of the corrosion products of the alitized alloys determined. Alloying of NbAl$_3$ with titanium increases its

1/2

USSR

VERGASOVA, L. L., and LAZAREV, E. M., Fizika i Khimiya Obrabotki
Materialov, No 6, Nov-Dec 70, pp 46-49

heat resistance and, consequently, the advisability of applying a titanium
"barrier" prior to alitization of heat-resistant niobium alloys not con-
taining titanium.

2/2

Coatings

USSR   UDC 669.018.95:621.357.7

RADOMYSEL'SKIY, I. D., APININSKAYA, L. M., and VERGELES, N. M., Institute
of Problems of Material Science, Academy of Sciences UkrSSR

"Preparation of Composition Nickel Coatings With Mullite Additions"

Kiev, Poroshkovaya Metallurgiya, No 8, Aug 70, pp 29-34

Abstract: A study was made of the production of composition nickel coatings
with different contents of filamentary mullite crystals (up to 3-5 vol %).
It was established that mullite additions considerably increase the dura-
bility of nickel coatings under conditions of high-temperature oxidation.
The best nickel coatings with filamentary mullite crystals were obtained
in sulfates of nickel electrolytes at low pH of the solution (2-3) and
temperature of 25-30°C.

1/1

USSR

VERGEYCHIK, T. KH.

"Photometric Determination of Chlorophenols in Commercial Herbicidal Prepara-
tions of the 2,4-D Group"

Translation: The reaction suggested for the qualitative and quantitative
evaluation of commercial herbicides is based on the reaction of chlorophenols
with pyramidon (I) in alkaline medium in the presence of potassium ferricyanide
(II). The reaction product has an orange-red color, and can be quantitatively
extracted with n-BuOH and it has the absorption maximum at 480 nm. The maximum
of λ in aqueous solution is at 510 nm. The analytical procedure includes the
addition of 2 ml. of 2% aqueous solution of I, 5 ml. 5% aqueous solution of
II, and 5 ml. of ammonium buffer pH 8.2 to aqueous solution of $2,4-Cl_2C_6-H_3OH$
which contains 0.01-0.3 mg of the pure herbicidal preparation. The total volume
is brought to 25 ml. in 15 min and the colorimetric analysis is carried out
with a blue filter. This approach is used for determination of chlorophenols in
herbicidal preparations by the addition method, differential photometry, and
from calibrated graphs. The first and the third methods produce too high
results because of background absorption.

1/1

1/2   041   UNCLASSIFIED   PROCESSING DATE--13NOV70
TITLE--HALOARYLATION OF UNSATURATED COMPOUNDS BY AROMATIC DIAZO COMPOUNDS.
   XXXIX. REACTION OF 1,ARYL,1,3,BUTADIENE WITH DIPHENYL,P,P PRIME,BIS
AUTHOR-(03)-GANUSHCHAK, N.I., VERGRZHANOVSKIY, V.A., MELNIK, N.M.

COUNTRY OF INFO--USSR

SOURCE--ZH. ORG. KHIM. 1970, 6(4), 785-8

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY, PHYSICS

TOPIC TAGS--BUTADIENE, DIAZONIUM SALT, BENZENE DERIVATIVE, CHLORIDE,
   HALOGENATION, LASER, LUMINOPHOR, SCINTILLATOR

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--2000/1946   STEP NO--UR/0366/70/006/004/0785/0788

CIRC ACCESSION NO--AP0125535
                         UNCLASSIFIED

CIRC ACCESSION NO--AP0125535
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE REACTIONS OF (SHOWN ON
 MICROFICHE).   THE STRUCTURE OF I WAS VERIFIED BY TREATING I (X EQUALS
 H, R EQUALS H OR ME) WITH P,CLN SUB2 PRIME NEGATIVE C SUB6 H SUB4 C SUB6
 H SUB4 CL,P TO OBTAIN THE CORRESPONDING II. II ARE USED IN LASER
 TECHNOL., AS LUMINOPHORS, OR AS SCINTILLATORS.   FACILITY:
 CHERNOVITS. GOS. UNIV., CHERNOVTSY, USSR.

UNCLASSIFIED

1/2   013

UNCLASSIFIED   PROCESSING DATE--30OCT70

TITLE--THEORY OF ISOTOPE SEPARATION DURING ELECTRODIALYSIS USING ION
EXCHANGE MEMBRANES -U-

AUTHOR-(04)-TIKHOMIROV, I.A., DURONIN, V.T., VERGUN, A.P., LARIONOV, V.V.

COUNTRY OF INFO--USSR

SOURCE--ZH. FIZ. KHIM. 1970, 44(3), 751-5

DATE PUBLISHED--------70

SUBJECT AREAS--NUCLEAR SCIENCE AND TECHNOLOGY, CHEMISTRY

TOPIC TAGS--ISOTOPE SEPARATION, ELECTRODIALYSIS, ION EXCHANGE MEMBRANE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--2000/1629   STEP NO--UR/0076/70/044/003/0751/0755

CIRC ACCESSION NO--AP0125251

UNCLASSIFIED

CIRC ACCESSION NO--AP0125251   UNCLASSIFIED   PROCESSING DATE--30OCT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE SEPN. OF 2 ISOTOPIC IONS IS TREATED AS IF OCCURRING IN 2 STEPS, I.E. BY EQUILIBRIUM DISTRIBUTION OF THE MIXT. THROUGHOUT THE ELECTRODIALYZER AND SEPN. OF COMPONENTS WITHIN THIS GENERAL DISTRIBUTION PATTERN. THE FINAL FORM OF THE EQUATION DESCRIBING PARTITIONING OF A BINARY SYSTEM OF ISOTOPES IN ELECTRODIALYZERS USING ION EXCHANGER MEMBRANES IS GIVEN. FACILITY: TOMSK. POLITEKH. INST., TOMSK, USSR.

UNCLASSIFIED

USSR

UDC 535.231.4

ARIFOV, U. A., RAKHIMOV, R. R., VERGUN, V. R., and KOVRYAZHENKOV, I. M.,
Electronics Institute, Academy of Sciences Uzbek SSR

"Variations in the Emissivity of a Surface During Bombardment With Atomic
Oxygen Ions"

Abstract: The article describes results of a study of the effect of atomic
oxygen ion fluxes on the emissivity of the surface of an enamel coating with
an emittance of $\varepsilon = 0.9$ in the 100-ev energy region. The instrument used for
the study differed from one previously used by the authors for molecular
fluxes in the design of the ion source and in a somewhat different measurement
sequence. It was found that bombardment with atomic oxygen ion fluxes leads
to an increase in the emissivity of the surface. A comparison of the results
obtained for the case of bombardment with molecular and atomic fluxes showed
that the change in ε of the coating is identical in character, differing
only in the quantitative values for the same flux density. Ionic bombardment

1/2

USSR

ARIFOV, U. A., et al., Izvestiya Akademii Nauk Uzbekskoy SSR, Seriya Fiziko-Matematicheskikh Nauk, No 3, 1973, pp 73-76

with atomic fluxes is less effective: the emissivity of the coating reaches the maximum after a longer time interval, and the value of the maximum for $\mathcal{E}$ is appreciably less than in the case with molecular fluxes.

2/2

Microelectronics

USSR

UDC 621.382

VERGUNAS, F. I., Doctor of Physical and Mathematical Sciences, IVANOVA, G. A.,
ABDIYEV, S., REPIN, A. V., VARFOLOMEYEV, I. N., Engineers

"Some Possibilities of Using Optoelectronic Switches in Microelectronic Circuits"

Moscow, Pribory i Sistemy Upravleniya, No 2, 1972, pp 45-46

Abstract: The OEK-2 optoelectronic converters -- a film photoresistor and
gallium phosphide light diode couple mounted in the TO-5 housing -- were described
previously [F. I. Vergunas, et al., Pribory i sistemy upravleniya, No 1, 1972].
In the present article a study is made of the possibilities of using OEK-2 in
phase automatic frequency control circuits, in automatic phase control systems
and as a controllable divider. The operating characteristics of the OEK-2 in
the various applications are described. Some advantages of the three mentioned
circuits using the OEK-2 include the following, respectively: 1) the filter
band width switching circuit using the OEK-2 is very simple, does not require
regulation and has an intake of no more than 10-20 milliwatts; 2) absence of
a galvanic coupling between the control voltage from the discriminator and the
signal the phase of which must be reversed in the automatic phase control sys-
tem; 3) application of a photoresistor as the controllable element permits a
divider to be obtained which is linear in a broad range of operating voltages
1/2

USSR

VERGUNAS, F. I., et al., Pribory i Sistemy Upravleniya, No 2, 1972, pp 45-46

-- from units of microvolts to several volts, the control signal is quite
small, and electrical decoupling is insured between the controlling and con-
trolled signals.

2/2

- 104 -

USSR   UDC 621.383.4:535.376:621.319.4

VERGUNAS, F. I.

"Film Elements of Optoelectronics"

Translation: The characteristics are considered of film photoresistors and
electroluminescent capacitors based on $A_{II}B_{VI}$ compounds. The possibilities
of their use in optoelectronic devices are considered. Optoelectronic
switches based on film photoresistors and light emitting diodes without
housings and also electroluminescent symbol indicators can be used in
microelectronic circuits, even at existing stages of development. 8 ill.
9 ref. Summary.

1/1

VERGUNOV, V. S. and PAVLENKO, V. A.

"Noise in Oscillatory D-C Amplifiers"

Abstract: An analysis is made of the effect of noise in oscillating d-c amplifiers under the assumption that it is low in amplitude, is close to white noise, and is statistically independent. The nonlinear characteristic of the amplifier, which plays an important part in the formation of the spectrum and fluctuation level at the output, is taken into account. The authors start their analysis with a second-order stochastic differential equation describing the system. This equation, combined with the equation for the amplitude of the noise, yields a differential equation for the amplitude of the high-frequency tuned circuit output which can be solved fairly easily for small increases in amplitude. Equations are also developed for the noise in the circuit's double-varicap bridge arrangement.

1/1

USSR

UDC 617.761-009.24-02:616.282.3

KURASHVILI, A. Ye., BABIYAK, V. I., VERICH, G. F., and PLATONOVA, T. G.,
Academy of Military Medicine imeni S. M. Kirov, Leningrad

"Parametric Description of Vestibular Nystagmus"

Moscow, Vestnik Otorinolaringologii, No 3, 1973, pp 31-35

Abstract: Based on a mathematical analysis of nystagmograms obtained from 50
subjects, the authors constructed empirical and theoretical curves showing the
dynamics of the primary parameters of the nystagmic cycle. Using the methods
of differential equations theory, they found the secondary parameters that
determine the general patterns of nystagmus as a "stimulus -- reaction" process.
Determination of the secondary parameters of vestibular nystagmus is of value
in tracing the dynamics of the nystagmic reaction in relation to vestibular
function and in diagnosing vestibular disorders. Nystagmus can also be
modeled on a computer. By introducing perturbations into the secondary param-
eters, one can obtain nystagmic reactions with preassigned properties, i.e.,
artifically create pathological situations and subject them to structural
analysis.

1/1

- 30 -

UDC 533.697

USSR

VERIGIN, I. S.

"Study of the Aerodynamic Characteristics of a Conical Exit Cone with a Porous Injector"

V sb. Mashiny i tekhnol. pererab. kauchukov, polimerov i rezin. smesey (Machines and Technological Processing of Rubber, Polymers and Resin Mixtures--collection of works), Yaroslavl', 1972, pp 159-165 (from RZh--Mekhanika, No 6, Jun 73, Abstract No 6B320)

Translation: An experimental study of the effect of the blowing of a single-row cooler by the law $\bar{T}_w$ = const through the porous wall of the diffuser was made for $R_0 = (0.5-4) \cdot 10^5$ and $\bar{T}_w = 0.99-0.735$. The effect of the blowing on the velocity profile in the boundary layer in different cross sections removed from the inlet to the diffuser by a distance of up to 5.55 diameters of the inlet is demonstrated. It is established that in all the investigated cases, the blowing leads to worsening of the operation of the diffuser -- the static pressure recovery factor decreases, the drag increases, and this is more intense the lower the temperature factor $\bar{T}_w$ -- the ratio of the temperature on the diffuser wall to the temperature at the inlet. The problems connected with

1/2

USSR

VERIGIN, I. S., Mashiny i tekhnol. pererab. kauchukov, polimerov i rezin.
smesey, 1972, pp 159-165

variation of the surface friction and a reduction in the wall temperature are
not investigated. The energy expended on blowing is not considered. The
bibliography has 6 entries.

2/2

- 36 -

VERIGO, S.A.

JPRS 58715-3
2 Feb 73

UDC 551.5:630:947.084(047)

APPLICATION OF AGROMETEOROLOGICAL DATA IN THE SERVICING OF SOVIET AGRICULTURE

The history of the development of agrometeorological observations in the Soviet Union since the time that V. I. Lenin signed the decree to organize the harvest service (1921) to the present time is discussed in this article. A brief characteristic of the scientific and procedural developments providing the basis for organization of them is presented. The area of application of the results of the observations for agrometeorological servicing of the Soviet agriculture is explained.

The principles of agricultural meteorological (agrometeorological) observations both for scientific and operative purposes in Russia were laid down at the end of the 19th century by A. I. Voyeykov and A. V. Klossovskiy. Subsequently, the work started by them was continued by P. I. Brounov, V. A. Mikhel'son and others. As a result, in addition to the network of meteorological stations of the Main Geophysics Observatory, at the beginning of the 20th Century local meteorological networks had begun to rise up in various parts of the country the primary mission of which was to study the meteorological conditions of interest to agriculture.

After the establishment of Soviet Power, in connection with the reconstruction of agriculture and conversion of it into a large socialist production enterprise regulated by a united state plan, the data on hydrometeorological factors became a vital necessity.

In April 1921, the Council of Labor and Defense of the USSR issued a decree signed by V. I. Lenin in which the following words appeared: "The experimental division of the Peoples' Commissariat of Agriculture is charged with the development of meteorological data of the Main Administration of Meteorology and data on the development of plants and their vegetative phases for establishing harvest species."

- 44 -

USSR   UDC 539.3.01

BOROVSKIY, P. V., VERIZHENKO, Ye. P., LISITSYN, B. M.

"Automation of the Solution of Certain Classes of Three- and Two-Dimensional Problems in Elasticity Theory"

Soprotivl. materialov i teoriya sooruzh. Resp. mezhved. nauch.-tekhn. sb. (Resistance of Material and the Theory of Structures. Republic Interdepartmental Scientific-Technical Collection), 1972, No. 18, pp 3-7 (from RZh-Mekhanika, No 3, Mar 73, Abstract No 3V25)

Translation: The basic elements of a universal algorithm for the approximate analytical computer solution of three-dimensional problems in elasticity theory with a high degree of automation are discussed. The basic algorithm is the defining states method which makes it possible to apply the algorithm in solving a wide range of boundary value problems. The algorithm is considered applicable to a mixed three-dimensional problem for a body having the shape of a rectangular parallelepiped. Authors' abstract.

1/1

VERIZHNIKOV, L. V., VOSKRESENSKAYA, O. V., KADYROVA, V. KH.,
KIRPICHNIKOV, P. A., MUKMENOV, E. T., Kazan' Institute of Chemical
Technology imeni S. M. Kirov and Institute of Organic Chemistry
imeni A. YE. Arbuzov, Academy of Sciences USSR

"Arbuzov Isomerization of Cyclic Phosphites Containing a Seven-
or Eight-membered Ring"

Abstract: To explore the applicability of the Arbuzov reaction
to the synthesis of cyclic phosphonates with seven- or eight-
membered rings, a study was made of the reactions of certain title
compounds with bromoethane. Heating a cyclic alkyl phosphite,
e.g., O,O'-diphenyl ethyl phosphite, with excess bromoethane in
a sealed ampoule gave a cyclic alkylphosphonate, e.g., O,O'-
diphenyl ethylphosphonate, with a higher mp and relatively more
stable than the starting phosphite. Structure of the prepared
compounds was confirmed by NMR and IR spectra. The elemental
1/2

- 45 -

USSR

VERIZHNIKOV, L. V., et al, Zhurnal Obshchey Khimii, Vol 41,
No 10, 1971, pp 2162-2164.

analysis data and some physicochemical constants of the synthesized
cyclic phosphonates are tabulated, and the experimental procedures
employed in their preparation are described.

2/2

USSR

VERIZHNIKOV, V. P.

UDC: 681.327

"Magnetostriction Delay Lines as Dynamic Memory Devices"

Tr. In-t elektron. upravl. mashin (Works. Institute of Control Computers), 1972, vyp. 19, pp 29-40 (from RZh-Avtomatika, Telemekhanika i Vychislitel'-naya Tekhnika, No 1, Jan 73, abstract No 1B447 by B. K.)

Translation: The author discusses the principles of construction of dynamic memory devices based on magnetostriction delay lines. The principal means of overcoming temperature instability in operation of such devices are noted -- development of memory devices with thermostatically controlled, calibrated magnetostriction delay lines; and the use of uncalibrated mag-netostriction delay lines with an additional information section. A block diagram is given of a memory device with an uncalibrated magnetostriction delay line in which the sound carrier is somewhat longer than required for the given information capacity.

It is noted that increasing the length of the sound carrier by 10% gives the device a reserve working capacity sufficient to compensate both the temperature changes in the length of the carrier and the instability of the cadence pulse oscillator frequency.

1/2

USSR

An analysis is made of the requirements for frequency stability of cadence pulse oscillators for systems with calibrated and uncalibrated magnetostriction delay lines. It is shown that the permissible frequency instability of the oscillator in both cases is inversely proportional to the capacity of the magnetostriction delay line. It is found that the limiting capacity of a memory device with an uncalibrated magnetostriction delay line is $(1-2)\cdot10^4$ bits at a sampling rate of up to $(1-2)\cdot10^6$ bits per second. Memories of the described type realized in the "Luch", "Iskra-111M", and other keyboard computers were found to lend themselves to series production and to have high operational reliability. Five illustrations, bibliography of three titles.

2/2

- 33 -

USSR

VERKELIS, I. Yu., Institute of Semiconductor Physics, Acad. Sci., Lithuanian
SSR, Vil'nyus

UDC: 621.315.592

"Photoconductive Spectra of In_2Te_5 Monocrystals"

Leningrad, Fizika i tekhnika poluprovodnikov, vol 6, No 6, 1972,
pp 1115-1117

Abstract: Experimentally obtained spectra for the photoconductivity
of In_2Te_5 monocrystals are shown. The monocrystals used for the
experiments were developed by chemical gas-conveyed reactions. As
substantiated by x-ray structural analysis, they were grown in the
(001) direction in the form of plates, and have monoclinic lat-
tices. The electrodes in contact with either side of the crystal
are sputtered onto it in a vacuum. Measurements for plotting the
spectra were made with a DMR-4 using a slit width of 0.1 mm, with
a constant number of incident quanta in the 500-1400 nm range in
polarized and unpolarized light at temperatures of 290 and 82° C.
Spectra are plotted for the photoconductivity of the crystals at
both these temperatures and with various thicknesses. The author
expresses his gratitude to Yu. A. Pyatenko for his comments and to
T. A. Zhdanov for his determination of the syngony and other crys-
tallographic parameters of the In_2Te_5.
1/1

USSR

UDC 621.039.524.034.3

GOKHSHTEYN, D. P., VERKHIVKER, G. P., TETEL'BAUM, S. D., LEBEDEV, YU. N.,
GRIVANOVA, S. M.

"Estimating the Thermodynamic Efficiency of Cycles of Thermally Dissociating
Substances"

Dissotsiiruyushch. gazy kak teplonositeli i rab. tela energ. ustanovok -- V sb.
(Dissociating Gases as Heat Transfer Agents and the Working Medium of Power
Plants -- Collection of Works), Minsk, Nauka i tekhn. Press, 1970, pp 52-60
(from RZh-Elektrotekhnika i Energetika, No 5, May 1971, Abstract No 5U187)

Translation: Various types of cycles in dissociating substances are investi-
gated and analyzed. Analysis demonstrated that out of the gas cycles in nitro-
gen tetroxide the most efficient is the gas cycle with subcritical compression.
The   economy   of the simplest regenerative gas cycles and the gas-liquid
cycles in N_2O_4 is higher than in nondissociating gases and low-boiling working
mediums. It appears prospective to use thermally dissociating working mediums
in multipurpose devices, in particular, in devices for generating electric
power and fresh water. There are 4 illustrations, 2 tables and a 4-entry
bibliography.

1/1

- 125 -

USSR

VERKHIVKER, M. A.

"Systems Approach to the Problem of Providing a Basis for the Primary Parameters of Maritime Transport Ships"

No abstract

1/1

USSR

UDC 51

VERKHIVKER, M. A.

"Some Characteristic Features of the Mathematical-Economic Models of Selecting the Type of Transport Ship for a Line"

No abstract

1/1

1/2   010
UNCLASSIFIED
TITLE--BUILDING PAINTS BASED ON MIXTURES OF AQUEOUS SOLUTIONS AND
DISPERSIONS OF FILM FORMING MATERIALS -U-
PROCESSING DATE--04DEC70

AUTHOR-(03)-OKHRIMENKO, I.S., VASILYEVA, T.P., VERKHOLANTSEV, V.V.

COUNTRY OF INFO--USSR

SOURCE--LAKOKRASOCH. MATER. IKH PRIMEN. 1970, (2), 13-16

DATE PUBLISHED-------70

SUBJECT AREAS--MATERIALS, MECH., IND., CIVIL AND MARINE ENGR

TOPIC TAGS--CONSTRUCTION MATERIAL, PAINT, STYRENE, LATEX, POLYVINYL
ACETATE/(U)SKS30 STYRENE RUBBER, (U)SKS65GP STYRENE RUBBER

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY FICHE NO----FD70/605019/010   STEP NO--UR/0303/70/000/002/0013/0016

CIRC ACCESSION NO--AP0140908
UNCLASSIFIED

CIRC ACCESSION NO--AP0140908

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. WATER SOL. PAINT FORMULATIONS
(DESIGNED FOR THE CONSTRUCTION INDUSTRY) WERE DEVELOPED FROM SKS-30 AND
SKS-65 GP LATEXES. THE ADVANTAGES OF THE PAINTS WERE NOTED. THE
PROPERTIES OF FILMS FORMED FROM AQ. SOLNS. OF PARTIALLY HYDROLYZED
POLY(VINYL ACETATE) AND OTHER POLYMER LATEX BLENDS WERE DISCUSSED.

UNCLASSIFIED

1/2   020   UNCLASSIFIED   PROCESSING DATE---04DEC70
TITLE--AQUEOUS PRIMING COMPOSITION BASED ON MICROGELS OF PYRIDINE
   CONTAINING COPOLYMERS -U-
AUTHOR-(04)-TOLMACHEV, I.A., VERKOLANTSEV, V.V., TSALINGOLD, V.L.,
   KOSMODEMYANSKIY, L.V.
COUNTRY OF INFO--USSR

SOURCE--LAKOKRASOCH. MATER. IKH. PRIMEN. 1970, (2), 36-40

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY, MATERIALS

TOPIC TAGS--FLUID VISCOSITY MEASUREMENT, PYRIDINE, COPOLYMER, STYRENE,
   GEL, RUBBER/(U)SKS65MVP10 SYNTHETIC RUBBER

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY FICHE NO----F070/605019/807 STEP NO--UR/0303/70/000/002/0036/0040

CIRC ACCESSION NO--AP0140902
                         UNCLASSIFIED

UNCLASSIFIED

CIRC ACCESSION NO--AP0140902

PROCESSING DATE--04DEC70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. VISCOSITY MEASUREMENTS INDICATED THAT PYRIDINE CONTG. COPOLYMERS, E.G., SKS-65 MVP-10 (I) MODIFIED WITH 50PERCENT H_3PO_4 AND OP-10 COULD BE USED FOR PRIMING RUSTY SURFACES. MICROHARDNESS MEASUREMENTS AND MICROPHOTOGRAPHY SUGGESTED THAT I PARTICLES AGGLOMERATED AND THE FILM WAS FORMED FROM THE LARGER PARTICLES. SEVERAL EQUATIONS WERE DERIVED FOR THE EVALUATION OF THE DEGREE OF PIGMENTATION OF MICROGELS.

UNCLASSIFIED

1/2   020   UNCLASSIFIED   PROCESSING DATE---30OCT70
TITLE--ELECTRON MICROSCOPIC DATA ON THE STRUCTURE OF FILMS FROM MIXTURES
   OF LATICES -U-
AUTHOR-(03)-VERKHOLANTSEV, V.V., CHERNYKH, V.D., MANUYLOV, A.I.

COUNTRY OF INFO--USSR

SOURCE--KOLLOIDNYY ZNURNAL, 1970, VOL 32, NR 3, PP 347-349

DATE PUBLISHED------70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--ELECTRON MICROSCOPY, LATEX, PLASTIC FILM, POLYSTYRENE RESIN,
   POLYVINYL CHLORIDE, BYUTADIENE STYRENE RESIN

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--2000/1598   STEP NO--UR/0069/70/032/003/0347/0349

CIRC ACCESSION NO--AP0125220
                            UNCLASSIFIED

2/2   020   UNCLASSIFIED   PROCESSING DATE--30OCT70
CIRC ACCESSION NO--AP0125220
ABSTRACT/EXTRACT--(U) GP-0-   ABSTRACT.   THE STRUCTURE OF FILMS FORMED UPON
DRYING OF DILUTED BINARY MIXTURES OF   POLYVINYL CHLORIDE, STYRENE AND
BUTADIENE STYRENE COPOLYMER LATICES HAS BEEN STUDIED BY ELECTRON
MICROSCOPY.   FACILITY: LENINGRADSKIY TEKHNOLOGICHESKIY INSTITUT.

UNCLASSIFIED

1/2   010
UNCLASSIFIED
TITLE--EVALUATING THE STABILITY OF POLYMER DISPERSIONS -U-
PROCESSING DATE--23OCT70

AUTHOR-(03)-VERKHOLANTSEV, V.V., SUTAREVA, L.V., SMIRNOV, N.I.

COUNTRY OF INFO--USSR

SOURCE--LAKOKRASOCH. MATER. IKH. PRIMEN. 1970, (1), 20-1

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY, MATERIALS

TOPIC TAGS--RUBBER CHEMICAL, LATEX, CALCULATION, CHEMICAL
STABILITY/(U)OP10 LATEX EMULSIFIER

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1997/0428
STEP NO--UR/0303/70/000/001/0020/0021
CIRC ACCESSION NO--AP0119364
UNCLASSIFIED

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. TWO METHODS USED FOR THE
EVALUATION OF OP-10 LATEX EMULSIFIER STABILITY VIZ., (A) BY CALCG. THE
HEIGHT OF THE POTENTIAL BARRIER (U) FROM CURVES PLOTTED FOR THE
POTENTIAL ENERGY OF PARTICLE INTERACTION VS. DISTANCE BETWEEN THE
PARTICLES, AND (B) BY MEASURING THE CRIT. DISTANCE BETWEEN THE PARTICLES
DURING DESTABILIZATION, WERE CRIT. EXAMD. A PLOT OF U EQUALS F(DELTA)
(WHERE DELTA EQUALS DELTA SUBO MINUS DELTA SUBCR--DELTA SUBO AND DELTA
SUBO AND DELTA SUBCR ARE THE CALCD. AND THE CRIT. THICKNESS OF A LIQ.
INTERLAYER) IN THE RANGE UNDER STUDY GAVE A CRUVE WHICH WAS EXTRAPOLATED
TO DELTA EQUALS 0 WHEN U EQUALS 0 AND CORRESPONDED TO AN UNSTABLE SOL.
THE CORRELATION BETWEEN U AND DELTA PERMITTED THE CALCN. OF U BY
INTERPOLATION (FROM THE EXPTL. DETD. SOL CONCN. CORRESPONDING TO ITS
COAGULATION).

Acc. Nr:
AP0036524

Ref. Code: UR 0069

STUDY OF THE STRUCTURE
OF FILMS OBTAINED FROM LATEX MIXTURES

V. V. Verkholantsev, I. S. Okhrimenko

Summary

The structure of films obtained from binary mixtures of latices of butadiene-styrene rubber SKS-30 and polystyrene or polyvinyl chloride has been studied by a photometric method. The globule distribution in the SKS-30-polyvinyl chloride mixtures has been found to be nonuniform to a considerable degree and the penetration of elastomer segments into polystyrene to be sufficiently deep. The films with a nonuniform globule distribution are more reinforced and their nonuniformity can be controlled by addition of surfactants to latices.

D.H.

REEL/FRAME
19721372

7

USSR

UDC   681.333

GUREVICH, M. A., VERKHORUBOV, B. A.

"A Device for Simulating a Heat Exchanger"

Moscow, Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, No 7, Mar 71, Author's Certificate No 295123, Division G, filed 16 Jun 69, published 4 Feb 71, p 148

Translation: This Author's Certificate introduces a device for simulating a heat exchanger. The device is made in the form of sections corresponding to the reduced length of the heat exchanger and contains adders, inte- grators, and multipliers. As a distinguishing feature of the patent, the device is simplified and provision is made for obtaining the static and dynamic characteristics of any channels and increasing precision by connect- ing the outputs of the adders of the resultant heat flux in each of the sections to the inputs of the accumulator-integrators for the heat of the coolants and the wall. The outputs of these integrators are connected through constant-coefficient multipliers to the inputs of the adders for the temperature differential. The outputs of these adders are connected

1/2

USSR

GUREVICH, M. A., VERKHORUBOV, B. A., Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, No 7, Mar 71, Author's Certificate No 295123, Division G, filed 16 Jun 69, published 4 Feb 71, p 148

through a second set of constant-coefficient multipliers to the inputs of the adders for the resultant flux. The outputs of the temperature-increment adders are connected through a third set of constant-coefficient multipliers to the inputs of multipliers whose outputs are connected to the inputs of the adders for the resultant flux.

2/2

- 153 -

1/2   030

UNCLASSIFIED

PROCESSING DATE--18SEP70

TITLE--FEATURES OF GELATINATION IN POLY(VINYL ALCHOL) -U-

AUTHOR-(04)-GEMBITSKIY, L.S., GUBENKOVA, YE.N., VERKHOTINA, L.N.,
SPERANSKIY, V.V.

COUNTRY OF INFO--USSR

SOURCE--VYSOKOMOL. SOEDIN., SER. A 1970, 12(2) 259-66

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--GELATION, POLYVINYL ALCOHOL, GEL, PLASTIC FILM, GLYCEROL,
ETHYLENE GLYCOL, CRYSTAL STRUCTURE, X RAY STUDY, THERMOMECHANICAL
PROPERTY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1987/1196

STEP NO--UR/0459/70/012/002/0259/0266

CIRC ACCESSION NO--AP0104562

UNCLASSIFIED

CIRC ACCESSION NO--AP0104562   UNCLASSIFIED

PROCESSING DATE--18SEP70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE DEPENDENCE OF STRUCTURAL
TRANSITIONS IN POLY(VINYL ALC.) (I) GELS AND FILMS ON TEMP., SOLVENT
COMPN., AND CONCN. WAS STUDIED.   AQ. I SOLNS. DILD. WITH PPTG. ALCS.
GLYCEROL, DIETHYLENE GLYCOL, AND ETHYLENE GLYCOL WERE HETEROGENEOUS,
HAVING 0.6-0.8 MU PARTICLES.   THE APPARENTLY FIRST ORDER SOLN. GEL
TRANSITION WAS ACCOMPANIED BY ABRUPT VOL. CHANGES.   THE OCCURRENCE OF
CRYSTN. WITH HEATING AT 160-210DEGREES OBSD. BY THERMOMECH. BEHAVIOR AND
BIREFRINGENCE, WAS CORROBORATED BY X RAY ANAL.   ONE CRYST. STRUCTURE
HAVING INTERPLANAR DISTANCE 4.37 ANGSTROM AND 2 THETA EQUALS 20DEGREES
WAS DETD. IN I GEL, FILM. AND POWDER.   ANOTHER WAS OBSD. ON HEATING I
FILM ABOVE THE GLASS TRANSITION.

UNCLASSIFIED

USSR   UDC 621.9.048.3

VERKHOTUROV, A. D., and MURZIN, L. M., Institute of Problems of Materials
Science, Academy of Science Ukrainian SSR

"Mechanism of Electrical Erosion of Composites During Electric-Spark Alloying"

Kiev, Poroshkovaya Metallurgiya, No 8, Aug 73, pp 94-99

Abstract: One of the prospective methods of applying coatings to metal
parts, to increase hardness, wear resistance, chemical stability, etc., is
electric-spark alloying where the anode material is transferred to the sur-
face being alloyed and the process can be viewed from a technological stand-
point as a coefficient of transfer: $K = c / ae \cdot 100\%$ where c is cathode
gain in weight in cm^3 [sic] and ae is anode erosion, cm^3. The coefficient
of transfer of pure carbides lies in the limits of 6-8% and such a low
coefficient is not effective when using transition metal carbides; there-
fore, the effect of soft binders in transition metal carbides was studied
as to their effectiveness in electri-spark alloying. Carbides ZrC and NbC
were studied with binders of Fe, Co, and Ni and a content ranging from 0 to
100%. Graphs of the relationship of K to binder content showed that a K of
1/2

USSR

VERKHOTUROV, A. D., and MURSIN, L. K., et al., Poroshkovaya Metallurgiya,
No 8, Aug 73, pp 94-99

90% is achieved for all the binders with NbC at a content of about 20 vol %
as opposed to ZrC in which the 90% level is not reached until about 35 vol %
binder. Anode erosion is less in the case of NbC with all binders than ZrC.
When the binder content is over the amount stated above for K = 90%, the
deformation capability of the composite and its resistance to brittle
failure are increased but its overall strength is reduced. Once the surface
layer has reached a significant thickness, cracks begin to develop and
propagate, which in turn leads to a lowering of the overall strength of the
composite. Total anode erosion is the sum of the amount of substance
removed in the liquid, gas, and solid states. Four figures, fourteen
bibliographic references.

2/2

- 10 -

Composite Materials

USSR

UDC 537.29.669.01

SAMSONOV, G. V., VERKHOTUROV, A. D., and PETROVA, YE. M., Kiev

"Regularities of the Anode Erosion of Alloys of Carbides of Transition Metals with Iron, Cobalt, and Nickel"

Moscow, Fizika i Khimiya Obrabotki Materialov, No 1, Jan-Feb 72, pp 140-144

Abstract: The problem of the bonding agent in developing composite materials based on brittle metal carbides of the fourth and fifth groups of the periodic table was experimentally investigated on specimens of alloys produced by a method of separate pressing and caking (Petrova, Ye. M., Dissertation Abstract, Institut Problem Materialovedeniya, Academy of Sciences, UkrSSR, 1970). The investigation results are discussed by reference to erosion and anodic transition coefficient dependences on the cubic content of the bonding agent and microstructures of steel U8 alloyed with different composite materials. It was found that the bonding of the investigated carbides with metal additions sharply decreases their erosion in comparison with pure carbides, but the transition coefficient increases from 6-7% to 70-80%. Carbides with bonding agent contents of up to 10-15% are recommended for practical use of composite materials. Nickel is recommended as the best bonding agent. Two illustrations, 10 bibliographic references.

1/1

1/2   017

UNCLASSIFIED

TITLE--SYSTEM FOR BASE LINE CORRECTIONS DURING THE RECORDING OF DIFFERENTIAL SPECTRA -U-

PROCESSING DATE--23OCT70

AUTHOR-(03)-AKSENOV, S.I., VERKHOTUROV, V.N., KOZHUKHAR, YU.N.

COUNTRY OF INFO--USSR

SOURCE--PRIB. TEKH. EKSP. 1970, 1, 184-5

DATE PUBLISHED-------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--SPECTROPHOTOMETER, SPECTRAL LINE, ERROR CORRECTION, ABSORPTION SPECTRUM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1988/1478

STEP NO--UR/0120/70/001/000/0184/0185

CIRC ACCESSION NO--AP0106234

UNCLASSIFIED

CIRC ACCESSION NO--AP0106234
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A SYSTEM IS DESCRIBED FOR
   CORRECTION FO THE BASE LINE WITH AN ACCURACY OF PLUS OR MINUS 2 TIMES 10
   PRIME NEGATIVE4 FOR HIGH SENSITIVITY DIFFERENTIAL DUAL BEAM
   SPECTROPHOTOMETER. THE SYSTEM USES THE RECORD OF THE BASE LINE ON AN
   AUXILIARY RECORDER, ITS REPRODUCTION WITH THE AID OF A FOLLOW UP SYSTEM
   LEASED ON PHOTODIODES, AND THE RECORD OF THE DIFFERENTIAL CURVE WITH
   SEQUENTUAL SWITCHING ON OF SLIDE WIRES OF 2 TAPE RECORDERS, ONE
   REPRODUCING THE BASE LINE, THE OTHER RECORDING THE DIFFERENCE SPECTRUM.
   THE INITIAL BASE LINE IN THE 500-600 NM SPECTRUM SECTOR IS SHOWN DURING
   RECORDING OF THE ABSORPTION SPECTRUM FROM A 2.6 TIMES 10 PRIME NEGATIVE7
   M SOLN. OF CYTOCHROME C. THE SENSITIVITY OF THE APP. EQUALA 1.7 TIMES
   10 PRIME NEGATIVE3 UNITS OF ABSORBANCE PER ONE SCALE DIVISION.
   FACILITY: BIOL.-POCHV. FAK., MOSK. GOS. UNIV., MOSCOW, USSR.

UNCLASSIFIED

USSR

VERKHOTUROV, Ye. P.

UDC: 681.3.06:51

"On Distributing the Flow of Problems Among Computers in a Computer System"

V sb. Nauch. i prakt. probl. bol'shikh sistem. Sekts. Bol'shiye sistemy. Teoriya, metodol., modelir. (Scientific and Practical Problems of Large Systems--collection of works. Large Systems Section. Theory, Methodology, Modeling), Moscow, "Nauka", 1971, pp 292-300 (from RZh-Kibernetika, No 12, Dec 71, Abstract No 12V953)

Translation: The article considers a heuristic method of distributing problems through a nonhomogeneous computer system which accounts for time spent on exchange of information between the computers of the system. Author's abstract.

1/1

- 69 -

1/2   010
UNCLASSIFIED
TITLE--INFLUENCE OF LIGHT, DARKNESS AND NITROGEN NUTRITION ON KETO AND
AMINOACIDS CONTENTS IN KIDNEY BEAN SPROUTS -U-
PROCESSING DATE--09OCT70
AUTHOR-(04)-KRETOVICH, V.L., GEYKO, N.S., TSENOVA, M.P., VERKHOTUROVA,
G.S.
COUNTRY OF INFO--USSR

SOURCE--IZVESTIYA AKADEMII NAUK SSSR, SERIYA BIOLOGICHESKAYA, 1970, NR 2,
PP 302-305
DATE PUBLISHED--------70

SUBJECT AREAS--AGRICULTURE, BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--PLANT PHYSIOLOGY, LEGUME CROP, AMINO ACID, NITROGEN, NUTRITION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1996/0475
STEP NO--UR/0216/70/000/002/0302/0305

CIRC ACCESSION NO--AP0117711
UNCLASSIFIED

2/2   010

CIRC ACCESSION NO--AP0117711   UNCLASSIFIED

PROCESSING DATE--09OCT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IT HAS FOUND THAT ILLUMINATION OF YOUNG KIDNEY BEAN PLANTS ENHANCES ACCUMULATION OF AMINOACIDS AND KETOACIDS IN THE LEAVES. THE KETO AND AMINOACIDS CONTENTS IN THE LEAVES IS HIGHER THAN IN THE STEMS AND ROOTS. ILLUMINATION OF THE PLANTS CONSIDERABLY INCREASES INCORPORATION OF C PRIME14 FROM C PRIME14 O SUB2 INTO THE KETOACIDS. NITROGEN STARVATION OF PLANTS ENHANCES THE ACCUMULATION OF KETOACIDS IN THE LEAVES. UTILIZATION OF KETOACIDS FOR AMINOACID SYNTHESIS IN THE LEAVES IS MORE ACTIVE ON AMMONIA NITROGEN THAN ON NITRATE NITROGEN. THUS ON AMMONIA NITROGEN THE KETOACID CONTENTS IN THE LEAVES IS LOWER THAN ON OTHER SOURCES OF NITROGEN. FACILITY: A. N. BACH INSTITUTE OF BIOCHEMISTRY ACADEMY OF SCIENCES USSR. FACILITY: TECHNOLOGICAL INSTITUTE OF FOOD INDUSTRY, MOSCOW.

UNCLASSIFIED

USSR

UDC: 8.74

RODIONOV, D. A., VERKHOVSKAYA, L. A.

"'Nairi-2' Computer Algorithm and Program for the Statistical Method of Detecting Anomalous Groups in the Results of Geochemical Sampling"

V sb. Stat. metody geol. issled. (Statistical Methods in Geological Research--collection of works), vyp. 4, Moscow, 1971, pp 10-14 (from RZh--Kibernetika, No 5, May 72, Abstract No 5V548)

[No abstract]

1/1

- 58 -

USSR

ALEKSEYEV, A. G., and VERKHOVSKAYA, T. A.

UDC 621.385.833:537.533.74

"Study of Small-Angle Electron Scattering"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Fizicheskaya, Vol 36, No 6,
1972, pp 1297-1300

Abstract: An attachment was developed for the EM-7 electron microscope for
the direct recording of the intensity of scattered electrons. It includes a
scintillation counter with an electron recording scheme according to the
pulse count with a filter for sifting inelastically scattered electrons and
with electromagnetic deflection coils. Deflection coils situated behind the
projection lens are used for the detailed recording of the small-angle elec-
tron-diffraction patterns. Special coils, mounted directly behind the speci-
men before the magnification system, are provided for instrument calibration.
One of the problems in small-angle diffraction is that of instrument calibra-
tion, which is simplified if the instrument includes a system for directly
recording the electron-diffraction patterns and recording the diffraction
curves on the tape of the self-recorder. The calibration coils make possible

1/2

USSR

the successive recording of patterns in the small- and large-angle region. By
selecting the appropriate recording scale, the instrument constant for the
small-angle study made   can be determined with high accuracy, provided that
the deflection system has good linear characteristics.   The small-angle scat-
tering of electrons by microinhomogeneities from several to hundreds of
angstroms in size (depending on the atomic composition of the studied sub-
stance) is always accompanied by a relatively large background of inelastical-
ly scattered electrons, which must be eliminated if reliable information
about the microstructure of a substance is desired in this region.

2/2

TL‍E--ACUTE RENAL INSUFFICIENCY DURING ACUTE GLOMERULONEPHRITIS IN
CHILDREN AND ITS TREATMENT WITH HEMODIALYSIS -U-

THOR-(OS)-SOROKINA, M.I., BAYANDINA, S.A., DANILINA, Z.A., LOKSHIN,
A.M., VERKHOVSKIY, B.D.

UNTRY OF INFO--USSR

URCE--PEDIATRIYA 49(2): 26-30. 1970.

TE PUBLISHED--------70

BJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

PIC TAGS--KIDNEY FUNCTION, DIALYSIS, BLOOD, NEPHRITIS

NTROL MARKING--NO RESTRICTIONS

CUMENT CLASS--UNCLASSIFIED

DXY FICHE NO-----FD70/605015/310 STEP NO---UR/0546/70/049/002/0026/0030

RC ACCESSION NO--AP0140558

UNCLASSIFIED

2. 016
C ACCESSION NO--AP0140558   UNCLASSIFIED   PROCESSING DATE--04DEC
TRACT/EXTRACT--(U) GP-0- ABSTRACT. TO FIND OUT THE MAIN CRITERIA OF
CUTE RENAL INSUFFICIENCY IN ACUTE GLOMERULONEPHRITIS IN CHILDREN, AN
NALYSIS WAS MADE OF THE TREATMENT OF 10 PATIENTS, 7 OF WHOM WERE
UBJECTED TO 15 COURSES OF HEMODIALYSIS. SIX PATIENTS RECOVERED, IN 1
ASE THE DISEASE BECAME CHRONIC, 3 PATIENTS DIED. ACUTE RENAL
NSUFFICIENCY IN ACUTE GLOMERULONEPHRITIS WAS CHARACTERIZED BY
LIGO-ANURIA WITH HYPOSISTENURIA, THREATENING HYPERPOTASSEMIA AND
20TEMIA, DECOMPENSATED METABOLIC ACIDOSIS AND HYPERHYDRATION. WHEN
ETECTING THE SYMPTOMATICS OF ACUTE RENAL INSUFFICIENCY, PATIENTS SHOULD
E TRANSFERRED TO SPECIALIZED NEPHROLOGICAL DEPARTMENTS WHERE
EMODIALYSIS CAN BE DONE IF REQUIRED.   FACILITY: I. M. SECHENOV
ST MOSCOW MED. INST., MOSCOW, USSR.

UNCLASSIFIED

94169y Crystal structure of Na₂(TiO)[GeO₄]. Verkhovskii,
V. Ya.; Kuz'min, E. A.; Ilyukhin, V. V.; Belov,   (Inst.
Kristallogr., Moscow, USSR). Dokl. Akad. Nauk SSSR 1970,
190(1), 91-3 [Crystallogr] (Russ). Na₂(TiO)[GeO₄] crystals
belong to the D_{4h}^7-P4/nmm symmetry group and have lattice
parameters $a = 6.67$ and $b = 5.16$ Å; $Z = 2$. Ge is tetrahedrally
spaced, having 4 Ge–O bonds equal to 1.74 Å, Na is octahedrally
spaced, having 4 Na–O equal to 2.32 and 2 Na–O equal to 2.67
Å, and Ti is polyhedrally spaced having 4 Ti–O equal to 2.0, 1
Ti–O equal to 1.72, and 1 Ti–O = 3.44 Å. Ti is 5-coordinated.
Presumably, in the investigated compd. and its analogs, Ti be-
haves as a semication-semianion, and, along with tetrahedral

GeO₄, it forms the 3-dimensional structure of the crystals.
                                                        HMJR

I B

18

USSR

UDC 669.046.5

SOKOLOV, G. A., SERGEYEV, A. G., TSYKIN, L. V., ZAVRAZHIN, V. D.,
VERKHOVTSEV, E. V., VASIL'YEV, N. Ye., and D'YAKOV, S. T.

"The Effect of Vacuum-Slag and Two-Fold Slag Treatments on Electrical Steel
Quality"

Moscow, V sb. "Sovremennyye problemy kachestva stali" (MISiS). (Collection of
Works. Modern Problems of Steel Quality) (Moscow Institute of Steel and Alloys)
Izd-vo "Metallurgiya," No 61, 1970, pp 212-213

Translation of abstract: The effect of various outside-furnace steel treat-
ments on desulfurization, contamination by nonmetallic impurities, and
mechanical properties of various steels is considered. Data are given on the
improvement of mechanical properties of structural alloy steels. 1 table.

1/1

USSR

UDC 669.046.5

SITNIKOV, V. F., VERKHOVTSEV, E. V., VASIL'YEV, N. Ye., ZHDANOVICH, K. K. and
UPSHINSKIY, Ye. A.

"Development of the Technology for High-Quality Alloy Steel Making in
Martin Furnace With Deoxidation and Alloying in Ladle With Liquid Alloy and
Simultaneous Refining With Synthetic Slag"

Moscow, V sb. "Sovremennyye problemy kachestva stali" (MISiS). (Collection of
Works. Modern Problems of Steel Quality), (Moscow Institute of Steel and
Alloys). Izd-vo "Metallurgiya," No 61, 1970, pp 250-252

Translation of Abstract: Results are presented on the joint treatment of
martin steel in a ladle by liquid alloys and synthetic slags, resulting in a
substantially increased assimilation of the alloying elements, in a high
degree of desulfurization and dephosphorization, and in reduction of steel
contamination by nonmetallic impurities. The quality of metal obtained is
similar to that produced in electric furnaces. 2 tables.

1/1

UDC 669.18:658.562

USSR

SOKOLOV, G. A., VERKHOVTSEV, E. V., KUNGUROV, V. M., SERGEYEV, A. G., VASIL'YEV, N. Ye., and VDOVIN, V. R., Lipetsk Branch of Moscow Institute of Steels and Alloys; Izhevsk Metallurgical Plant

"Refining Open-Hearth Steel With Synthetic White Slag"

Moscow, Metallurg, No 9, Sep 70, pp 17-19

Abstract: In searching for ways of cutting costs of liquid synthetic slags produced from the costly SiO_2 byproduct, this paper attempts to introduce new compositions of slags designed for out-of-the-furnace refining of steel. The new composition, comprising 45-55% CaO, 17-25% SiO_2, 5-10% MgO, 7-15% Al_2O_3, and 2-7% CaF_2, appears to possess the most favorable combination of physicochemical properties. Industrial treatment of 20KhN3A and 30KhGSA constructional open-hearth steels with synthetic slag of this composition reduced the sulfur content in the experimental steel by 55-70%. The final sulfur level in the treated steel was low and conformed with that of electric steel treated with lime-silica slag. The service characteristics of the experimental steel also appeared to reach the level of steels treated with standard liquid synthetic slags. White synthetic slag will make possible the production of top-quality steel at lower cost per charge. At the Izhevsk Metallurgical Plant the savings per ton of treated steel amounted to 2.2 rubles.

1/1

Acc. Nr.: _AP0042565⁻_

Modeling Distribution of Solar Radiation

Ref. Code: _ULR 0293_

JPRS 50162

(Abstract: "Modeling the Distribution of Solar Radiation Energy in the Spectral Region 500-1,500 A Using a Gas-Jet Source," by E. T. Verkhovtseva, A. V. Kravchenko, V. S. Osyka and Ya. M. Fogel'; Moscow, Kosmicheskiye Issledovaniya, Vol VIII, No 1, 1970, pp 140-145)

In earlier articles (E. T. Verkhovtseva, et al., Zh. Prikl. Spektroskopii, 7, 1967, 859; Optika i Spektroskopiya, 25, No 3, 1968, 440) the authors described the design and results of testing of a source of vacuum UV radiation based on the excitation of a supersonic jet of gas flowing into a vacuum by a dense electron beam. An important characteristic of this source is that it can be introduced in a rather large solid angle into a space with a superhigh vacuum without employing a differential pumping system and without using any windows separating the light source from the space of the superhigh vacuum. This property of the gas-jet source allows its use for study of phenomena which occur in solid bodies which are in a superhigh vacuum exposed to a light flux. The gas-jet source can produce a light flux in a broad spectral range, including the near IR, visible and UV spectral regions. The energy distribution in the radiation spectrum of the gas-jet source is dependent on the type of gas, the pressure in the jet and on the energy of the exciting electrons. The objective of this

Reel/Frame

19760542

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12

USSR   UDC 621.396.62.029.6:621.391.822

GERTSENSHTEYN, M. YE., SOLOVEY, . L. G. and VERKHOVYKH, N. P.

"Determination of the Noise Factor of a Microwave Receiver"

Moscow, Radiotekhnika, Vol 25, No 1, Jan 70, pp 70-73

Abstract: This article presents an attempt to standardize the defi-
nition of the noise factor, taking the concordance of the noise
source and transmission line into account. The use of wave resistance
of the transmission line as a standard impedance in the problems of
noise measurement is recommended. The proposed definition states
that the single channel differential noise factor of a device is the
ratio of the total noise power emitted at the output load on opera-
tional frequency at standard noise temperature ($T=293^{\circ}K$) of the signal
source, consistent with communication line, to the part of this power
determined by the source. Justifications underlying the proposed
definition are developed on the basis of tuning and operation condi-
tions of various amplifiers and receivers considered here. Original
article has 2 figures and 7 formulas.

1/1

- 83 -

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study was determining the operating regime of the source in which the
energy distribution of the radiation in the spectral region 500-1,500 A
would be close to the energy distribution of solar radiation in this same
spectral range. It was found that the radiation energy distribution of a
mixture of $Ar + 6.5 \cdot 10^{-2}\% \ Kr + 1 \cdot 10^{-3}\% \ Xe + 1.8 \cdot 10^{-4}\% \ CH_4$ is closest to
the distribution of solar energy.

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BOGOD, YU. A., VERKIN, B. I., and KRASOVITSKIY, V. B.

"Special Features of the Electrical Conductivity and Magnetoresistance of Antimony at Low Temperatures"

Moscow, Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki, Vol 61, No 1(7), Jul 71, pp 275-286

Abstract: Certain previously discovered properties of the electrical conductivity and magnetoresistance of antimony at low temperatures ($2^{\circ}-77^{\circ}$ K) were studied in detail for samples 0.5-4.0 mm thick. Measurements were made in both stationary and impulse transverse magnetic fields. After briefly describing the conditions of their experiment and the results they obtained, the authors discuss the results in detail under the following three main topics: 1) the mean free path of charge carriers in antimony; 2) the effect of the procedure used to prepare the samples on the kinetic properties of antimony; 3) the mechanisms of scattering of charge carriers in samples of infinite thickness.
  The mean free path of the charge carriers as determined from mobility measurements differed by approximately one and a half orders of magnitude from the mean free path as determined from the dimension effect. This
1/2

- 83 -

USSR

BOGOD, YU. A., et al., Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki,
Vol 61, No 1(7), Jul 71, pp 275-286

difference is thought to be associated with the presence of macroscopic
regions of unbalanced distribution of charge carriers in the antimony
samples.

   Substantial differences were observed in the kinetic properties of
samples which had similar geometric dimensions but which had been prepared by
different methods, namely chemical etching and electrospark cutting. Apart
from the unaccounted for effect of the surface layer, the authors think this
may be caused by two factors, which are not mutually exclusive: scattering
of twins along the edges and the varying state of the surface. These problems
are currently being investigated.

   With respect to topic 3) above, the authors are inclined to think that
the scattering of charge carriers which occurs in infinitely thick samples
of antimony at temperatures in the interval 1.6-20.0 K is due manily to
defects in the crystalline lattice and to phonons.

2/2

USSR   UDC 621.52(088.8)

VEREIN, R.I., STREL'NIKOV, V.P. [Fiz.-tekhn. in-t nizkikh temperatur AN USSR--Physico-Technical Institute Of Low Temperatures, AS,UkrSSR]

"Vacuum Chamber For Investigation Of The Properties Of Materials During Their Exposure To Ultraviolet Radiation"

USSR Author's Certificate No 258654, filed 3 July 67, published 15 Apr 70 (from RZh--Elektronika i yeye primeneniye, No 11, November 1970, Abstract No 11A39P)

Translation: A vacuum chamber is proposed for investigation of the properties of materials during their exposure to ultraviolet radiation. The chamber contains the radiation source, and a sample holder for the materials being investigated is mounted inside the chamber. The chamber differs in the fact that, with the object of the maximum approach of the ultraviolet radiation source to the irradiated objects, the radiation source is introduced inside the chamber and consists of a Laval nozzle feeding gas into the chamber, an electron gun which excites the ultraviolet emission of the gas flow, and a cooled condenser.

1/1

USSR

BOGOD, Yu. A., VERKIN, B. I., and KRASOVITSKIY, Vit. B., Physicotechnical In-
stitute of Low Temperatures of the Academy of Sciences UkrSSR

"The Effect of Boundaries on the Electrical and Galvanomagnetic Properties of Sb"

Abstract: Two single crystals of Sb were studied in the temperature range 1.6-
20°K in stationary fields up to 20 koe. The sample dimensions were $4 \times 4 \times 25$ mm^3
for Sb V and $1.3 \times 1.3 \times 22$ mm^3 for Sb VI. A rise in the sample temperature and
an increase in the transverse dimensions led to qualitatively the same effect:
a rise in the anisotropy of the magnetoresistance; the boundaries thus have a
definite effect on the anisotropy of magnetostriction below 20°K. The resistance
does not increase quadratically down to a temperature of 10°K, which is close to
the effective Debye temperature for electron-phonon interaction in Sb. A change
in the transverse dimensions of the sample had a considerable effect on quantum
effects: the amplitudes of Shubnikov-de Haas oscillations differed by a factor
of 2.5. A completely unexpected result was obtained in evaluating the free path
length in Sb. On the one hand, the change in the specific resistance of Sb with

1/2

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thickness even at $14^\circ K$ ($R_{300^\circ K}/R_{14^\circ K}$ is 314 and 250 for Sb V and Sb VI, respectively) indicates that the free path length of the charge carriers at this temperature is of the order of 1 millimeter. On the other hand, according to Oktu and Saunders (Proc. Roy. Soc., 91, 156, 1967), the relaxation time of the change carriers in Sb at room temperature is weakly anisotropic and is $(1-1.4)\cdot 10^{-13}$ sec. If it is assumed that the variation with temperature of the components of the relaxation time tensor is the same with an accuracy up to an order of magnitude, $\tau \simeq 4\cdot 10^{-11}$ sec at $14^\circ K$. Since the Fermi velocity of electrons and holes in Sb is $2\cdot 10^7$ cm/sec, the path length is equal to the Fermi velocity times the relaxation time: i.e., 10^{-3} cm. It is said to be unlikely that these characteristics of the electro- and magnetoresistance are associated with the classical dimension effect.

2/2

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UDC: None

KHOLOSHA, Ye. G., VOYEVODIN, Yu. M., VERKLOV, B. A., and ZAVGO-
RODNIY, Ye. Kh.

"Safety Valve for Hydraulic Systems"

Moscow, <u>Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye
znaki</u>, No 27, 1971, p 124, No (11)351027

Abstract: The body of the valve contains a load spring in a gate
made of a hollowed cavity containing a two-piston differential
plunger. There is also an added cavity with a two-piston plun-
ger containing a stepped bore into which the first cavity fits,
thus lending the device compactness and a better structure. The
valve is made by cutting slits in the body into which the plungers
are inserted. A diagram of the device in cross section is given.

1/1

USSR

GODLEVSKIY, V. S., VERLAN', A. F., VLADIMIROV, V. M.

"Problem of Selection of Tolerances for Specialized Computer Elements"

Kibernet. i Vychisl. Tekhn. Resp. Mezhved. Sb. [Cybernetics and Computer Technology. Republic Interdepartmental Collection], 1972, No 18, pp 7-12 (Translated from Referativnyy Zhurnal Kibernetika, No 4, 1973, Abstract No 4V623, by the authors).

Translation: A method is studied for selection of tolerances for parameters of specialized computer devices, based on the use of methods of the theory of sensitivity, linear and nonlinear programming. The goal functions used may be cost, development time, weight, etc.

1/1   - 79 -